

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN & STATEWIDE HAZARD ASSESSMENT

2018 UPDATE

**Montana Disaster and Emergency Services
State Hazard Mitigation Officer:
Nadene Wadsworth**



Why are we doing this?



Why are we doing this?



Mitigation Minute

In 2016, nearly

ONE BILLION DOLLARS

in Pre- and Post-Disaster

Hazard Mitigation Assistance Grants

was delivered to states, tribes, and communities

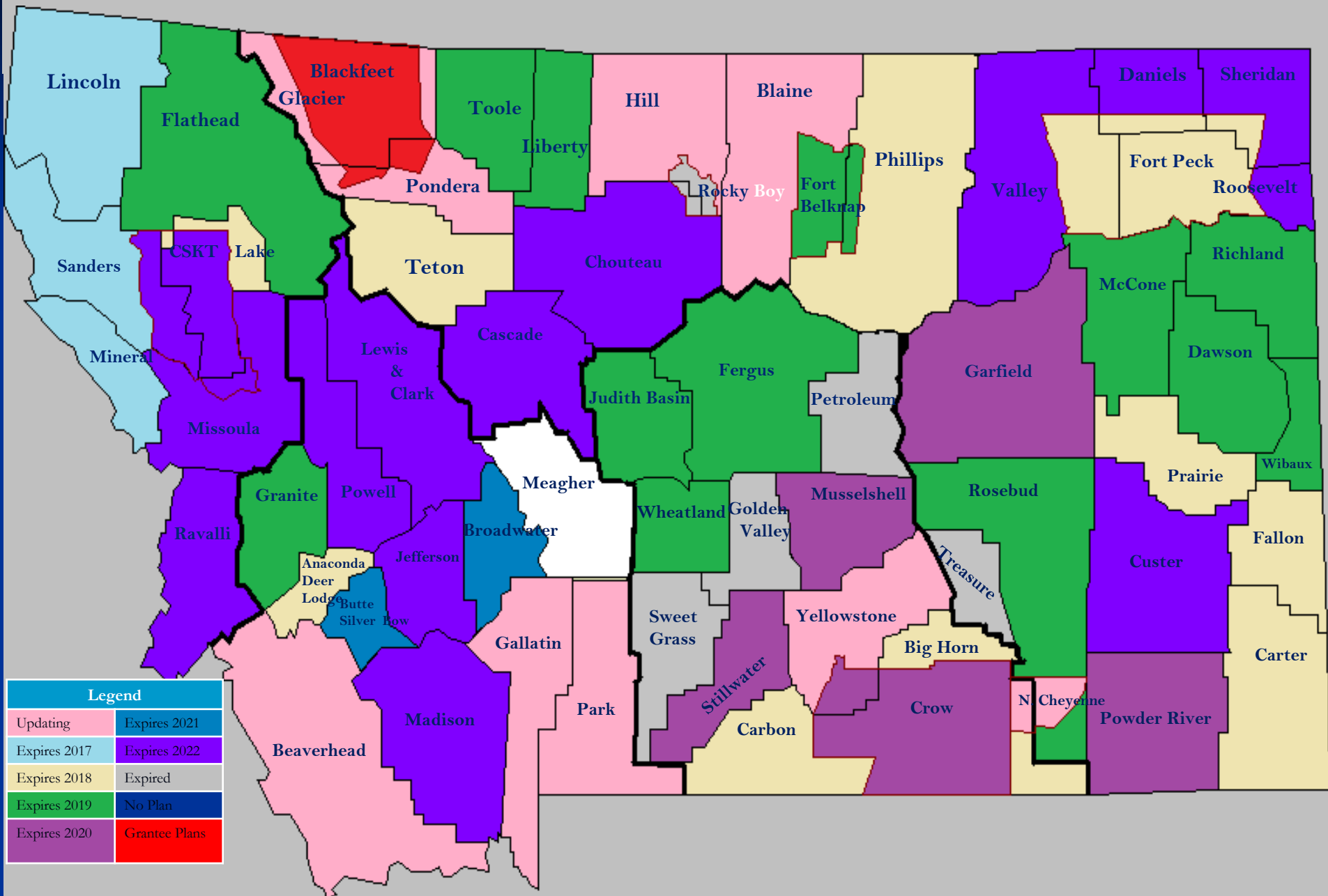
that will result in mitigation actions that

reduce risk



*FY 2016 Data

State of Montana Mitigation Plan Status



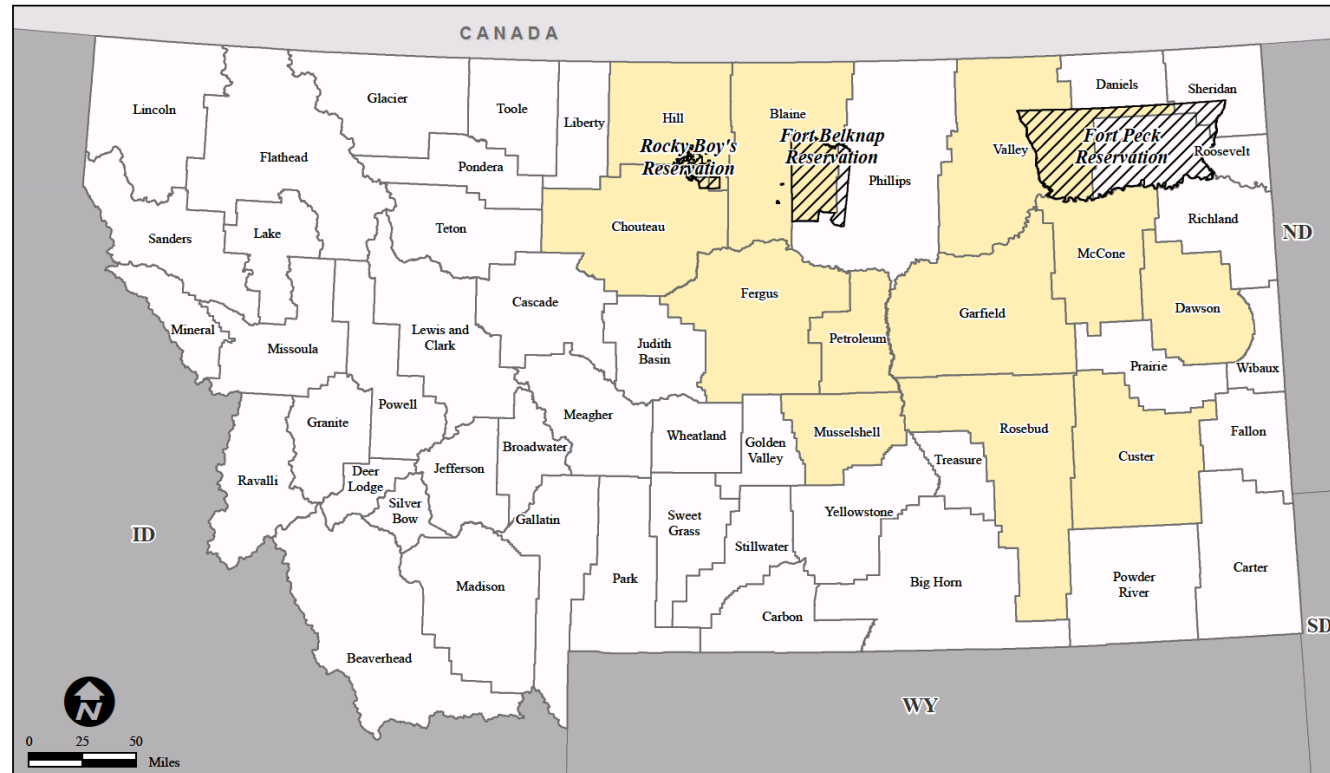
Legend	
Updating	Expires 2021
Expires 2017	Expires 2022
Expires 2018	Expired
Expires 2019	No Plan
Expires 2020	Grantee Plans

PRESIDENTIAL DISASTERS SINCE 2013

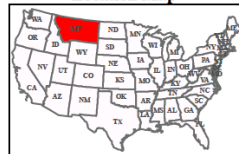
■ 7/10/2013 – FEMA – 4127- DR

- Rain flooding
- \$293,753 in Hazard Mitigation Grant funds

FEMA-4127-DR, Montana Disaster Declaration as of 07/10/2013



Location Map



Designated Counties

- No Designation
- Public Assistance
- Public Assistance: Reservation

All counties and Indian Tribes in the State of Montana are eligible to apply for assistance under the Hazard Mitigation Grant Program.



MS-CI-AE-EG

Mapping and Analysis Center
07/10/13 -- 3:15 PM EST

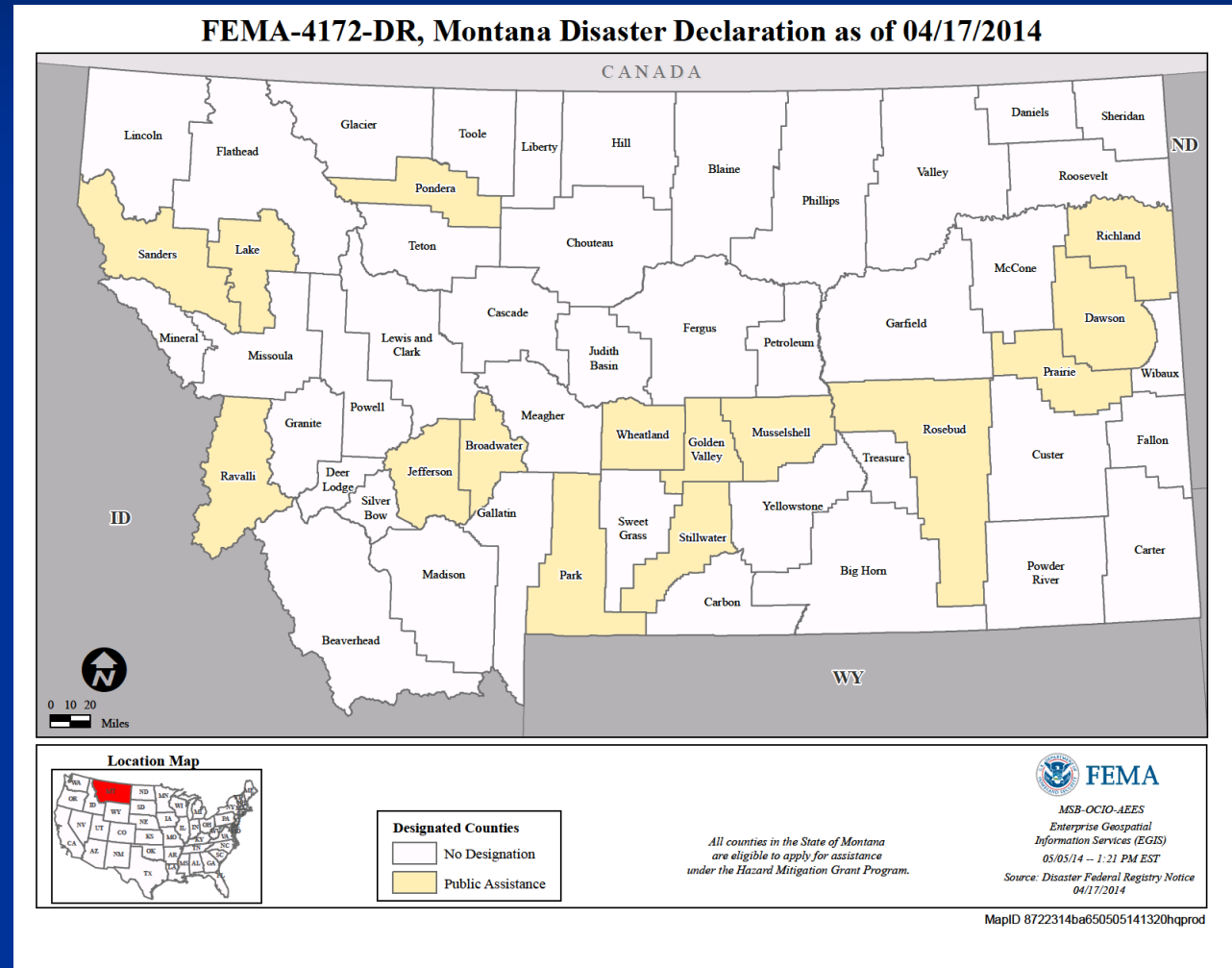
Source: Disaster Federal Registry Notice
07/10/2013

MapID f09079ec8280710131513hpnrd

PRESIDENTIAL DISASTERS SINCE 2013

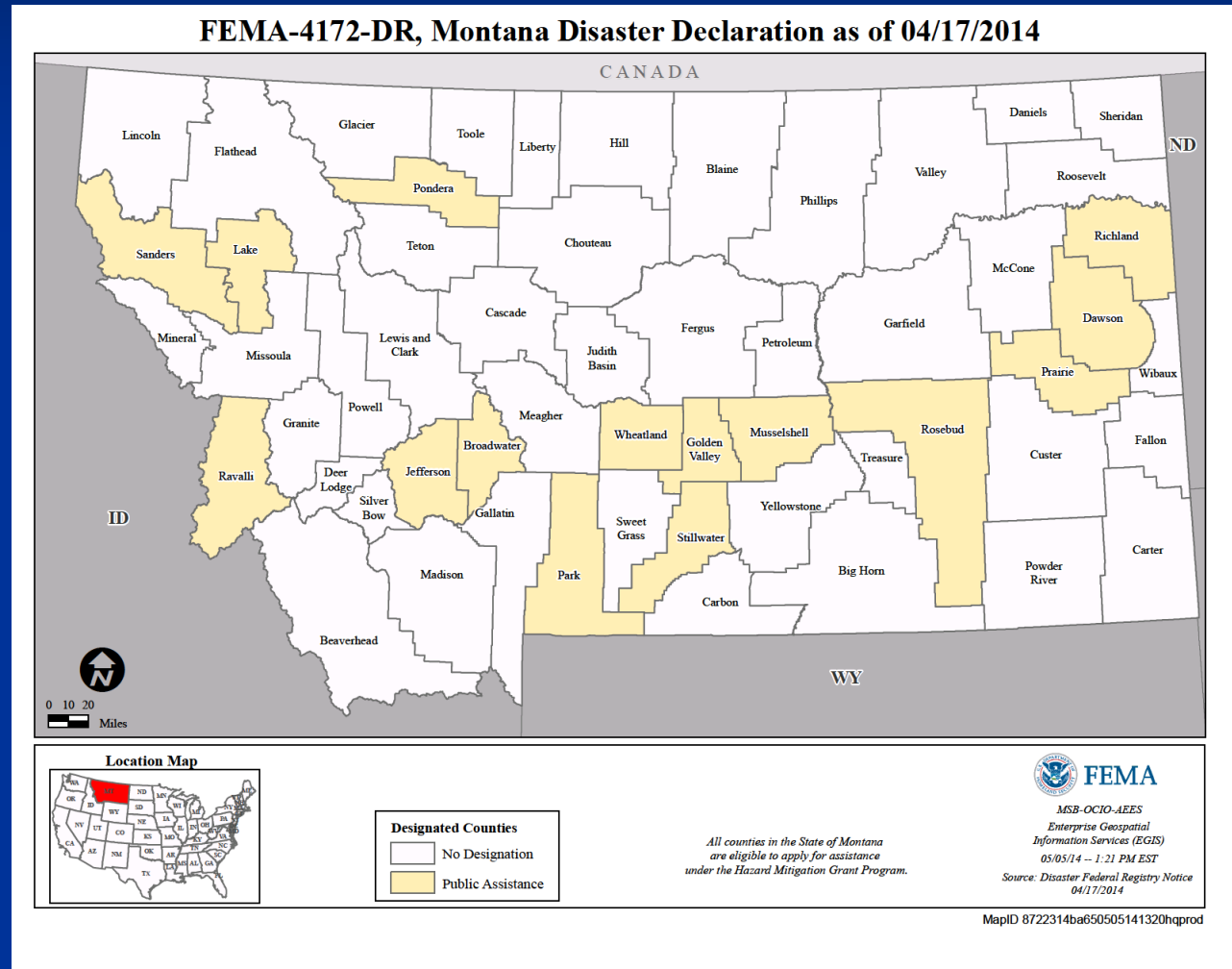
■ 4/17/2014 –
FEMA –
4172-DR

■ Ice jam
and
flooding
■ \$122,419
in Hazard



- 10/10/2014 – FEMA – 4198-DR

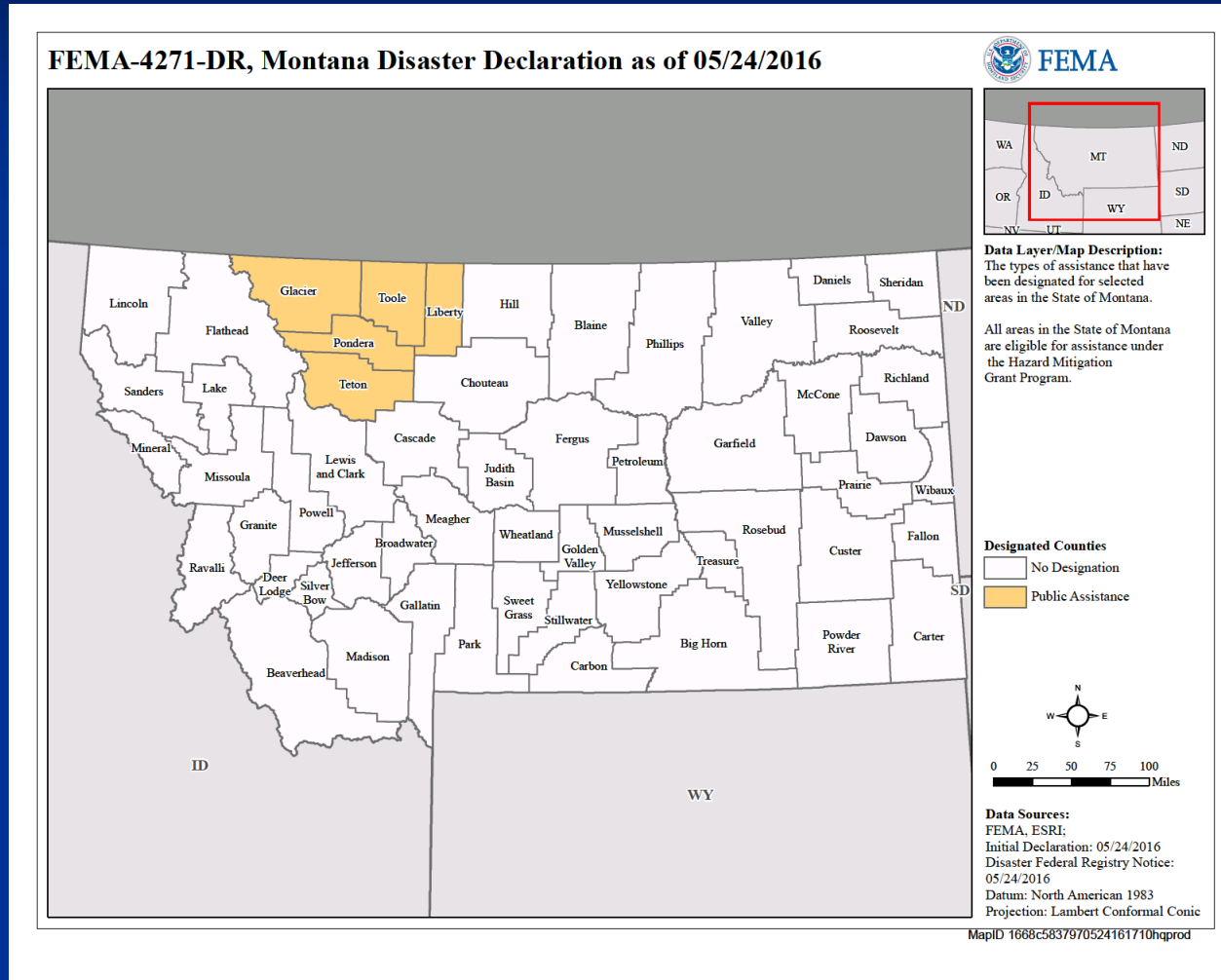
- \$177,773 in Hazard Mitigation Grant funds



PRESIDENTIAL DISASTERS SINCE 2013

■ 5/24/2016 – FEMA – 4271- DR

- Severe storm
straight line
winds
- \$192,892 in
Hazard
Mitigation
Grant funds

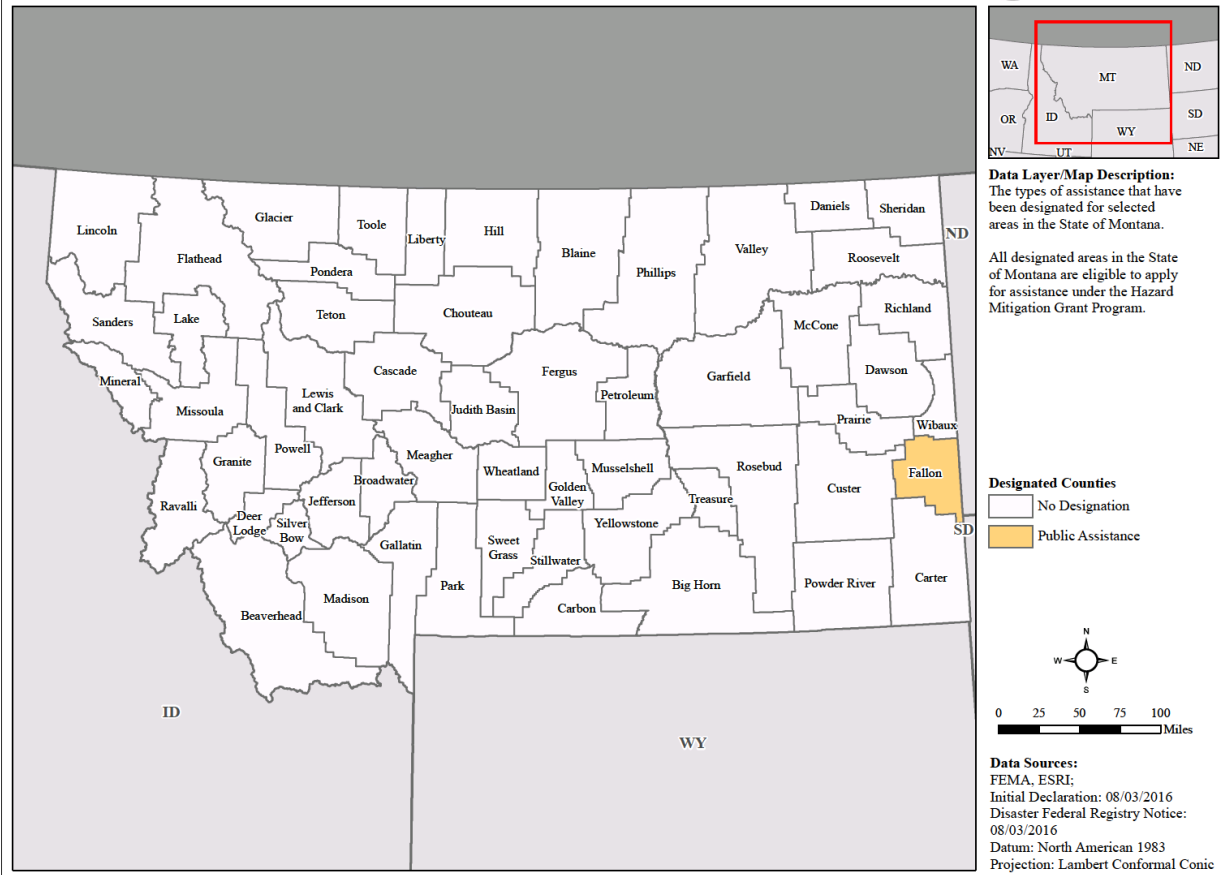


PRESIDENTIAL DISASTERS SINCE 2013

■ 6/12/2016 - DR-4275

- Tornado
- \$127,316 in Hazard Mitigation Grant funds

FEMA-4275-DR, Montana Disaster Declaration as of 08/03/2016



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Hazard Mitigation Grants funded projects since 2013

DR-4127

- Miles City Transfer Switch: Federal \$3,695 / Local \$1,232
- DNRC Drought Program: Federal \$14,976 / Local \$4,992
- Missoula County Fuel Reduction: Federal \$112,500 / Local \$37,500
- Fergus County Acquisitions: Federal \$120,821 / Local \$30,418
- Sheridan Board: Federal \$13,070 / Local \$4,357
- Cascade Elevation: Federal \$52,829 / Local \$17,610
- Dry Creek Broadwater County: Federal \$65,475 / Local \$21,825
- Baker Acquisition: Federal \$66,994 / Local \$22,331

Hazard Mitigation Grants funded projects since 2013

DR-4198

- Valley County Stream Gauges: Federal \$6,412 / Local \$2,137
- Musselshell Co. Stage Stop Acquisition: Federal \$160K / Local \$53,333

DR-4271

- Stillwater Co. Generator Project: Federal \$9,6745 / Local \$3,225
- Toole Co. Marias Medical Center Generator: Federal \$105,912 / Local \$35,304

DR-4275

- Fallon County Weather Radios: Federal \$9,674 / Local \$3,225
- Madison County Mammoth Area Fuels Reduction: Federal \$120,257 / Local \$40,086

FEMA Pre-Disaster Mitigation Grants Since 2013

Planning Projects

- Develop & Update State and Local PDM Plans
- PDM 2013 - 6 County Plan Updates: Federal \$134,846 / Local \$44,950
- PDM 2014 – 5 County Plan Updates: Federal \$108,600 / Local \$36,201
- PDM 2015 – 8 County Plan Updates: Federal \$107,540 / Local \$35,929
- PDM 2016 – 6 County & State Plan Updates : Federal \$292,604

Non-Planning Projects

- 2013 - Wyttenhove Custer County: Federal \$227,947 / Local \$75,982
- 2016 – Musselshell Acquisitions: Federal \$2,522,236 / Local \$966,156
- 2016 – Deer Lodge Acquisition: Federal \$99,377 / Local \$24,844
- 2016 – Stillwater Landslide: Federal \$1,860,000 / Local \$620,000

FEMA Flood Mitigation Grants Since 2013

FMA 2013

- Miles City Flood Plan: Federal \$21,500 / Local \$181,500

FMA 2015

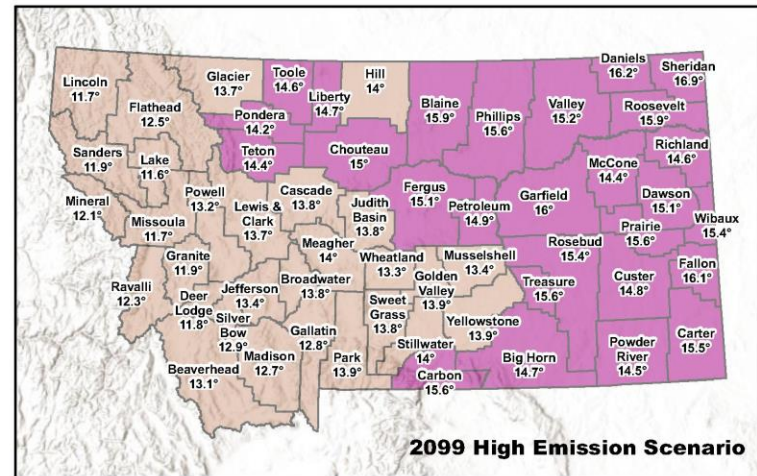
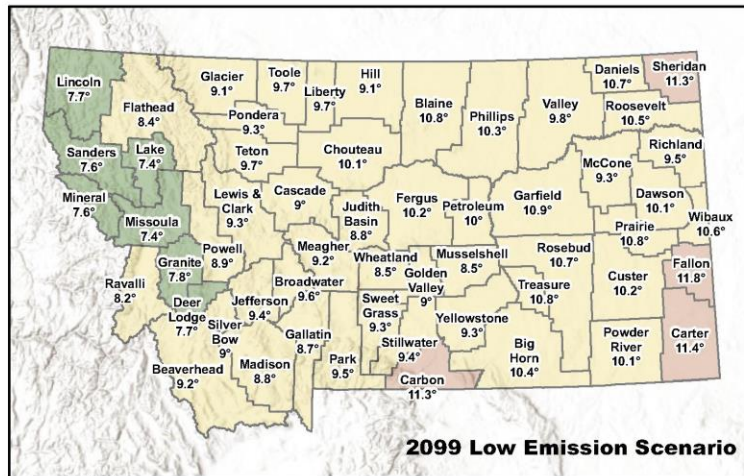
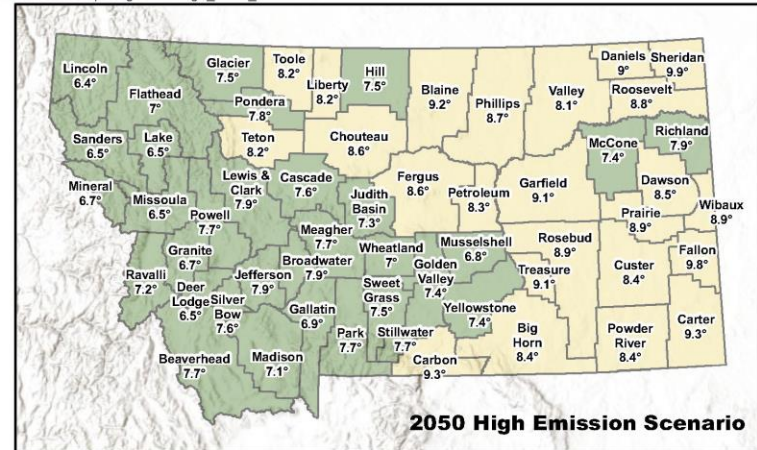
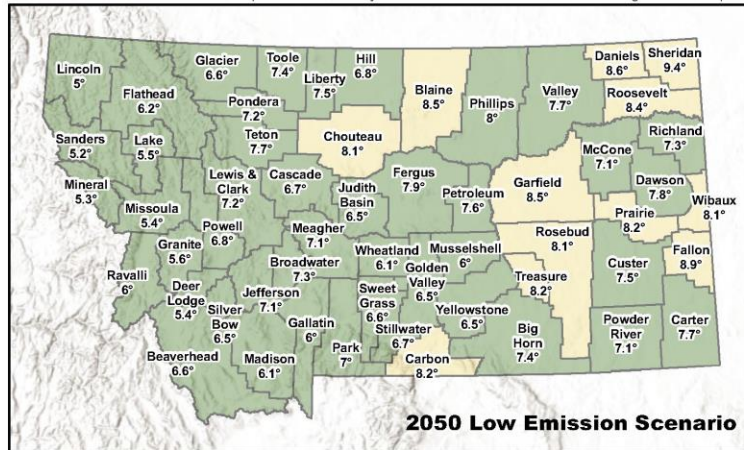
- Musselshell Acquisition: Federal \$177,922 / Local \$19,769 (90/10 split repetitive loss)
- Musselshell Acquisition: Federal \$233,347 / Local \$24,816 (90/10 split repetitive loss)

CHANGES FOR 2018 STATE PLAN UPDATE

- Compliance with FEMA's 2015 State Mitigation Review Guide.
- Consider Probability of Changing Future Conditions, including Effects of Long-Term Changes in Weather Patterns and Climate
 - Changes in location and magnitude of impacts (more intense storms, frequent heavy precipitation, heat waves, drought, extreme flooding, or increased wildfire).
 - Increased vulnerability due to climate change.
 - Incorporate Climate Change Element in Risk Assessment using Data Developed by FEMA and NOAA for Montana Counties.

PROJECTED TEMPERATURE CHANGES

Document Path: O:\H-MMontana Department of Military Affairs\114-560598 - State Hazard Mitigation Plan Update\120-GIS\ArcMap\DegreeChange_2050_2099.mxd



Date: 2/26/2018



Low emissions scenario assumes that global emissions of the greenhouse gas that cause changes in climate conditions peak in the year 2040 and then decline. High emissions scenario assumes that global emissions of greenhouse gases remain largely unabated through the 21st century (FEMA 2017).

Legend

Degree Change (°F)	
5.0 - 8.0	Green
8.1 - 11.0	Yellow
11.1 - 14.0	Orange
14.1 - 17.0	Purple

Figure #
**Degree Change in Maximum Median Annual Temperature
 Between 2009 and 2050/2099 Low and High Emission Scenarios**
State of Montana Multi-Hazard Mitigation Plan
2018 Update

2018 PLANNING PROCESS

- Permanent Montana Mitigation Advisory Group
 - Biweekly (7) workshops to update mitigation strategy from September – December
 - Representation from State Agencies, Federal Partners, Non-Governmental Organizations
- Stakeholders Group
 - Entities responsible for hazard data, climate projections and data, emergency management, land use and development, infrastructure, and natural and cultural resources.
 - Seek comments from review of draft Plan.
- Six Public Meetings
 - Coincide with meetings held by other organizations

HAZARD RANKING METHODOLOGY

- Calculated Priority Risk Index (CPRI)
 - Probability - Highly likely to unlikely
 - Magnitude/Severity - catastrophic to negligible
 - Warning Time - < 6 hours to > 24 hours
 - Duration- < 6 hours to > one week
 - Modified Index to include:
 - Economic Impacts – catastrophic to negligible
- State Discretionary Hazard Prioritization

2018 HAZARD PRIORITIZATION

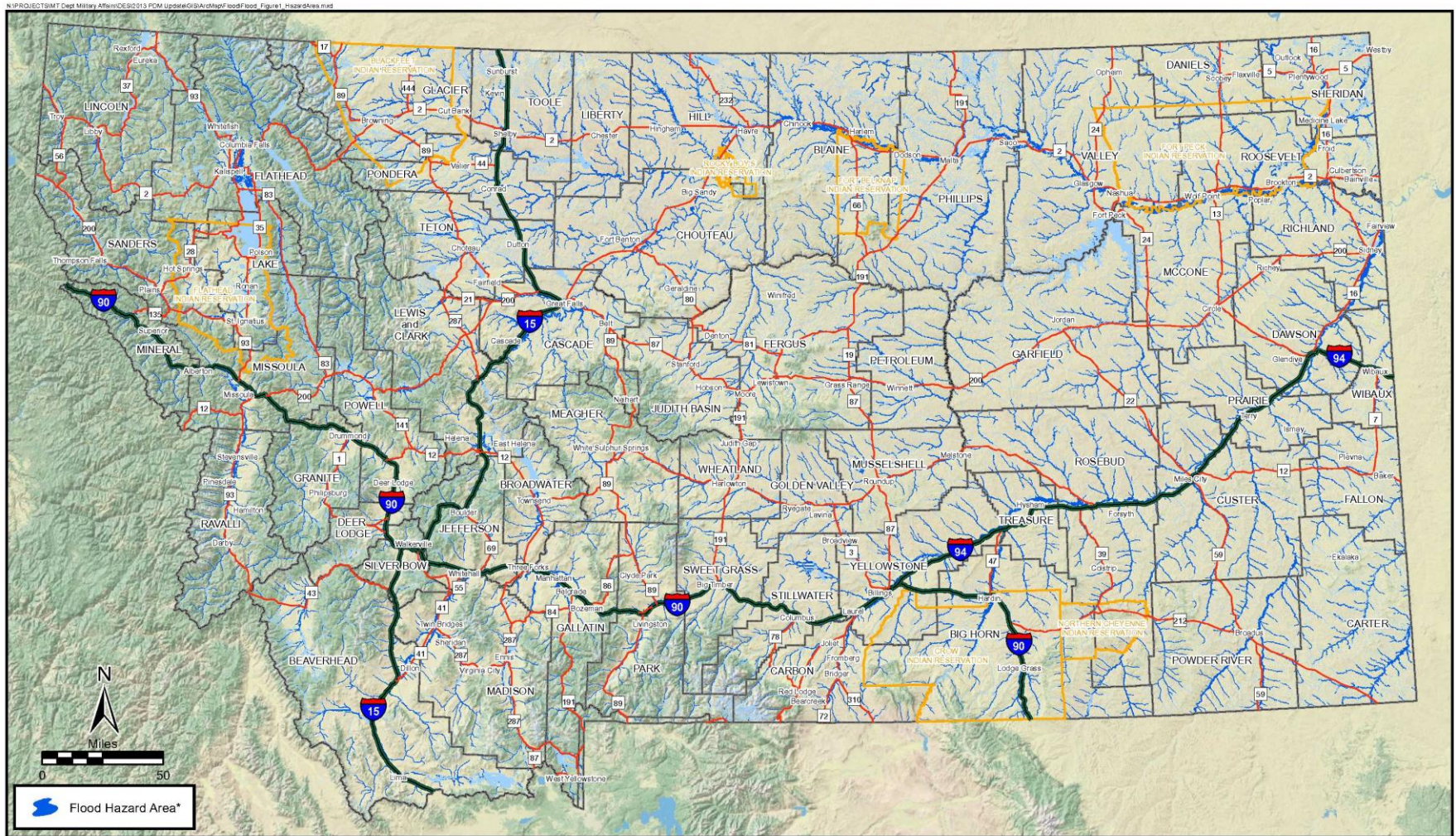
- 1 – Wildfire and Rangeland Fire
- 2 – Flooding
- 3 – Earthquakes
- 4 – Drought
- 5 – Severe Weather
- 6 – Hazardous Materials &
Transportation Accidents
- 7 – Disease (public health, agriculture, wildlife)
- 8 – Landslides & Avalanche
- 9 – Dam Failure
- 10 – Terrorism
- 12 – Volcanic Ash



2018 RISK ASSESSMENT

- Developed hazard profiles
- Determine Spatial Hazard Areas
 - DFIRMs/HAZUS for Flooding
 - Inundation maps for Dam Failure
- Use GIS to intersect Critical Facility and Building Stock Data with Hazard Areas
 - Report # and value of state critical facilities, residential and commercial/agricultural/industrial structures at risk for each county and incorporated city by hazard
 - Link NRIS Structures Framework with Cadastral for better spatial representation of vulnerable structures
- Determined societal exposure
 - Total population at risk, under 18, over 65

2013 FLOOD HAZARD MAP



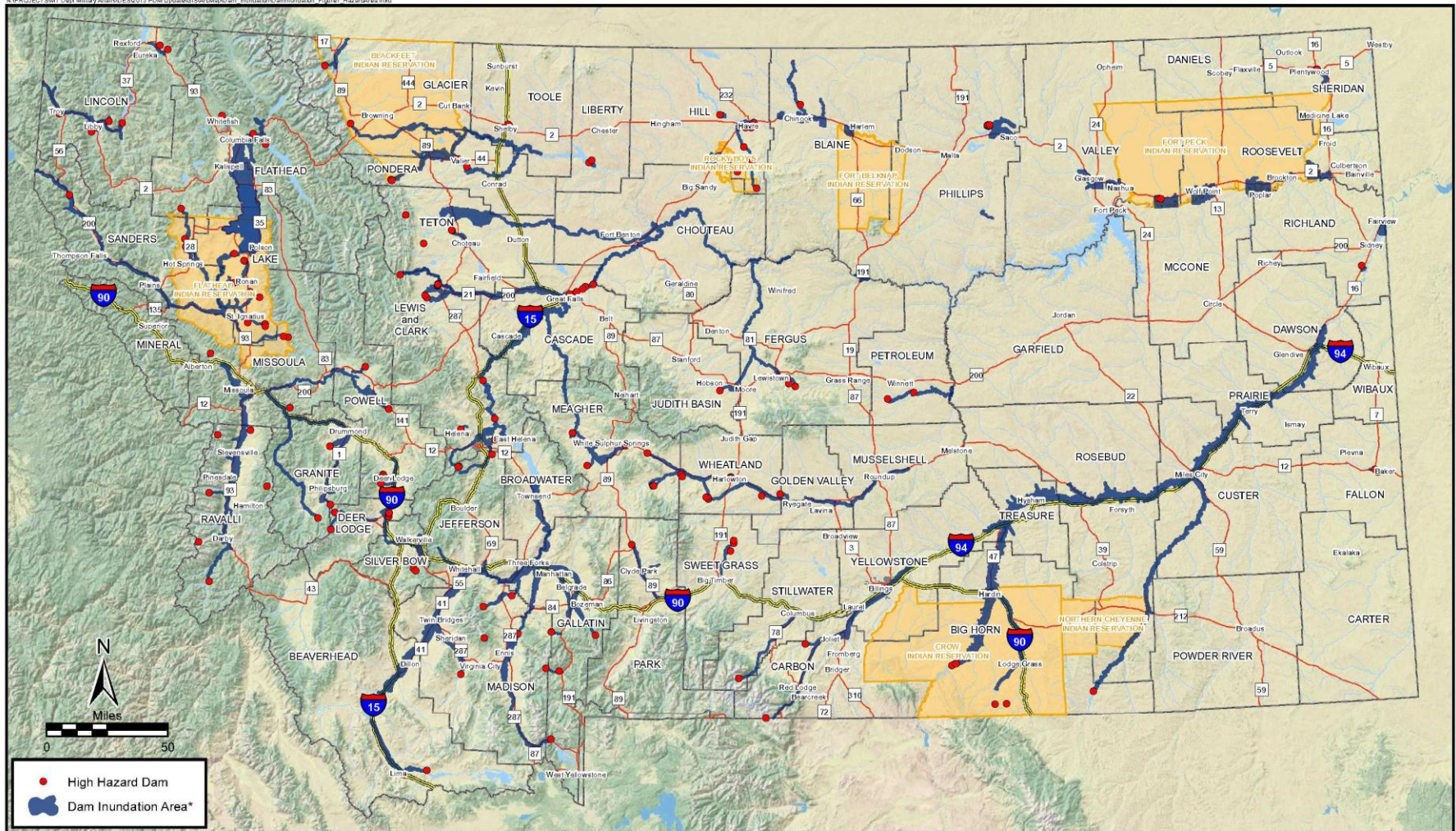
*Flood Hazard Area as determined by county DFIRM (Digital Flood Insurance Rate Maps) and FEMA's HAZUS-MH flood modeling. The flooded area displayed shows a likely 100-yr event.



Figure 4.4.2-3
Flood Hazard Area
State of Montana Multi-Hazard Mitigation Plan – 2013 Update
March 2013

2013 DAM FAILURE HAZARD MAP

N:\PROJECTS\MT Dept Military Affairs\ES2013 POM Update\GIS\ArcMap\Info_kunderson\DamInundation_Figure1_HazardAreas.mxd



*Dam Hazard Areas as determined by Inundation Maps in Emergency Action Plans (Area visible not to scale - Area has been exaggerated for display purposes).

MITIGATION STRATEGY

- One Goal for each Hazard plus All Hazard Goal
- Update Mitigation Objectives Consistent with FEMA Guidance
 - Prevention, Property Protection, Structural, Public Education and Outreach, Natural Resource Protection, Emergency Services, Planning/Mapping Projects
- Determine Status of Existing Mitigation Projects
 - Complete, Retain, Reword, Delete
 - Document Progress Made, Planned Activities
- Include New Mitigation Projects and Implementation Details to Reduce Losses Identified in the Risk Assessment
 - Responsible Agency, Potential Funding Sources

FLOOD MITIGATION PROJECTS

Project 3.1.1 - Encourage jurisdictions to pursue mitigation projects for repetitive loss structures or any severe repetitive loss properties identified in the future.

Project 3.2.1 - Improve flood risk hazard mapping.

Project 3.2.2 - Coordinate with partners on flood mitigation (e.g. Joint Stream Restoration Committee, Conservation Districts, Drought and Water Supply Committee, Silver Jackets).

Project 3.2.3 - Develop digital mapping for all levees within the State.

Project 3.2.4 - Identify and catalog all repetitive and severe repetitive loss properties in the State.

Project 3.3.1 - Encourage appropriate entities to obtain conservation easements for land in the floodplain.

Project 3.4.1 - Increase flood water conveyance at transportation crossings including upgrades to undersized bridges or those with scour damage.

Project 3.4.2 - Implement appropriate mitigation for highways that flood.

FLOOD MITIGATION PROJECTS

Project 3.4.3 - Support local communities to elevate community water systems where vulnerable to flooding.

Project 3.4.4 - Support local communities to install and/or enhance storm water systems to reduce flood damage.

Project 3.4.5 - Encourage Natural Channel Design (NCD) techniques for stream restoration and bank restoration/stabilization projects to increase flood resiliency.

Project 3.4.6 - Encourage projects that will increase stream length to regain natural function and reduce impact of flooding.

Project 3.5.1- Promote flood hazard risk communications.

Project 3.5.2 - Continue to provide education on benefits of National Flood Insurance Program (NFIP).

Project 3.5.3 - Provide outreach and technical assistance in joining the NFIP Community Rating System for reducing flood insurance premiums.

FLOOD MITIGATION PROJECTS

Project 3.5.4 - Educate home and business owners on anchoring fuel storage tanks, backflow valves in toilets and floating propane tanks.

Project 3.5.5 - Identify and manage risks associated with levees by promoting insurance and financial assistance programs.

Project 3.5.6 - Support community-based education and outreach to landowners about the risks of developing outside of designated areas, but in known flood prone and Channel Migration Zones.

Project 3.5.7 - Educate public on need to limit future development in the floodplain.

Project 3.6.1 - Improve identification of ice jams and promote development of emergency action plans.

DAM FAILURE MITIGATION PROJECTS

Project 10.1.1 - Develop updated evacuation maps for non-federal high hazard dams for risk assessment.

Project 10.1.2 - Evaluate existing dams for hazard classification.

Project 10.1.3 - Keep Emergency Action Plans current.

Project 10.2.1 - Repair high hazard dams with deficiencies.

Project 10.3.1 - Exercise Emergency Action Plans.

Project 10.3.2 - Encourage continued participation of local and tribal DES in DNRC dam safety table top exercises.

Project 10.3.3 - Streamline and improve DNRC earthquake response protocol and safety table top exercises.

Project 10.4.1 - Provide awareness to community of possible flooding from operational flows.

CAPABILITY ASSESSMENT

- Mitigation Policies, Programs, Capabilities for Flooding
 - National Flood Insurance Program and Community Rating System
 - Map Modernization and Risk MAP Programs
 - Flood Mitigation Assistance Program
 - Dam Safety Program
- Local Mitigation Capabilities for Flooding
 - Building codes
 - Zoning
 - Growth Policies
 - Subdivision Regulations
 - Planning Boards
 - Floodplain Management

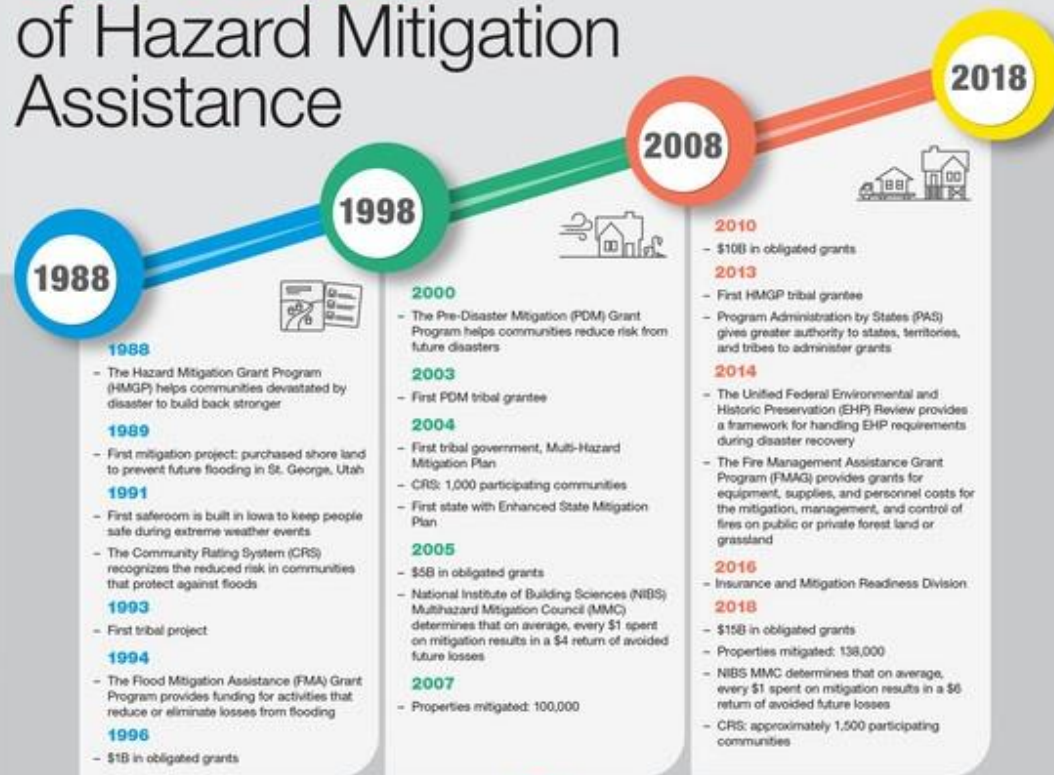
PROJECT SCHEDULE

- Planning Team Meetings – September through December
- Public Meeting in 6 DES Districts – March/June 2018
- Draft Plan Submittal to DES for 30-Day Review – June 15, 2018
- Respond to DES Comments and Produce Final Corrected Draft – July 15 to 31, 2018
- DES Submits Plan to FEMA for Pre-Approval (45 days) – August 1, 2018
- Respond to FEMA Comments and Produce Final Plan – September 15 to 30, 2018
- Plan Adoption by State – October 1 to 15 , 2018
- FEMA approval letter to State – October 16 to November 1, 2018 or sooner

Mitigation Minute



30 Years of Hazard Mitigation Assistance



LEGISLATIVE



MILESTONES

1988 Robert T. Stafford Disaster and Emergency Assistance Act
1993 Hazard Mitigation and Relocation Assistance Act
1994 National Flood Insurance Reform Act

2000 Disaster Mitigation Act
2006 Post Katrina Emergency Management Reform Act

2012 Biggert-Waters Flood Insurance Reform Act
2013 Sandy Recovery Improvement Act
2014 Homeowner Flood Insurance Affordability Act

QUESTIONS?

Thank you